

CLAIMS

What is claimed is:

1. An internal combustion engine, comprising:
 - a crankcase having walls which define an interior volume for containing oil;
 - a cylinder head having a proximal end fastened to the crankcase, the cylinder head extending laterally outward from the crankcase and terminating at a distal end;
 - a rocker arm cover, fastened to the distal end of the cylinder head, the rocker arm cover defining a cavity therein which forms a valve box;
 - a drainback passage interconnecting the interior volume of the crankcase and the valve box to enable the flow of fluid from the valve box to the interior volume of the crankcase; and
 - a check valve, disposed within the drainback passage, for allowing the flow of fluid from the valve box to the interior volume of the crankcase and preventing the flow of fluid from the interior volume of the crankcase to the valve box.
2. An internal combustion engine, as recited in claim 1, wherein the check valve comprises a reed valve.
3. An internal combustion engine, as recited in claim 1, wherein the check valve comprises a check disk.
4. An internal combustion engine, as recited in claim 1, wherein the check valve comprises a ball valve.
5. An internal combustion engine, as recited in claim 1, wherein the drainback passage is formed as an integral part of the cylinder head and the crankcase.

6. An internal combustion engine, as recited in claim 1, wherein:

the cylinder head has a bore formed therethrough extending from the distal end to the proximal end of the cylinder head;

the crankcase has a cylinder formed in one of the walls, the cylinder having a cylinder wall, integrally formed in the wall of the crankcase, having an interior surface that communicates with the interior volume of the crankcase and an exterior surface that engages the proximal end of the cylinder head; and

the cylinder wall has a bore formed therethrough extending from the interior surface to the exterior surface, where it aligns with and couples to the cylinder head bore; wherein

the first bore and the second bore together define the drainback passage.

7. An internal combustion engine, as recited in claim 6, further comprising a head gasket disposed between the crankcase and the cylinder head, the head gasket having an aperture that is aligned with the first and second bores to allow the flow of fluid therethrough.

8. An internal combustion engine, as recited in claim 6, wherein:

the bore in the cylinder wall is enlarged at one end to form a cavity in the exterior surface of the cylinder wall; and

a check ball is disposed within the cavity; wherein

the check ball seats against the bore at the proximal end of the cylinder head to prevent the flow of fluid from the interior volume of the crankcase to the valve box when there is high pressure present within the crankcase or when the engine is operated at an elevated angle; and

the cavity and the check ball together define the check valve.

9. An internal combustion engine, as recited in claim 8, wherein the check ball is formed of a fluorocarbon material.